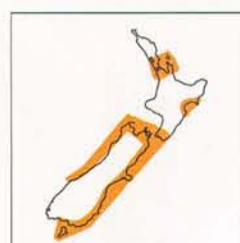


Shags are medium to large aquatic birds. Most are all black, or black above and white below. Bill long, strongly hooked at the tip. Upright posture when perched. Short legs; feet are fully webbed. Many have brightly coloured facial skin when breeding. Sexes alike. In flight, wings short and broad, and neck is extended. Swim with head held uptilted and body low in the water.

SPOTTED SHAG (Parekareka) *Stictocarbo punctatus* Locally common endemic

70 cm, 1200 g. Slender grey shag with yellow feet and long slender brown bill. Breeding adult has small black spots on back and wings; rump, tail and thighs black; underparts grey; a broad white stripe from above eye down sides of the neck, and sparse white streaks (filoplumes) on neck and thighs; conspicuous double crest, curled forward; green facial skin. Non-breeding adult lacks crests and has obscure white stripe on neck, yellow facial skin, and paler underparts. Immature is paler and browner, lacks distinct head or neck markings. In flight, looks very slender and pale with darker rump and tail. Flies low to the water, often in strings, with rapid wingbeats. **Habitat:** Estuaries, harbours and coastal waters around mainland NZ. **Breeding:** All year. [Sp 101]



SHAGS

33 species worldwide in freshwater and marine habitats; 12 species breed in the New Zealand region, including 8 endemic species.

In New Zealand, all members of the Phalacrocoracidae are called shags, whereas elsewhere the term 'cormorant' is used for members of the genus *Phalacrocorax*. Foot colour varies between the three genera in New Zealand: black in the mainly freshwater *Phalacrocorax*, pink in the marine *Leucocarbo*, and yellow in the marine *Stictocarbo*.

Shags are medium to large, long-necked aquatic birds with a stiff, wedge-shaped tail, and moderately short, rounded wings, which black-footed shags hold out to dry when perched. They feed by diving from the water surface to catch fish and crustacea with their long hooked bill. They use their webbed feet to swim underwater. The outermost toe is

Phalacrocoracidae

longest, and a web connects the inner toe with the long hind toe. In the breeding season, bare skin on the face becomes brightly coloured and contrasts with the eye and bill.

Shags sometimes feed in flocks, but they typically roost in flocks and breed in colonies on cliffs or rocky islets, or in trees overhanging water, sometimes together with other shags. They have an elaborate series of ritualised courtship displays at or near the nest, a bulky platform made of sticks or seaweed. Their eggs have a chalky encrustation on the surface. Both sexes share incubation. The chicks are naked at hatching but soon develop down. Both parents regurgitate food for the chicks. If a predator approaches, chicks in tree nests overhanging water will jump well before they can fly, but they are adept at climbing back up to the nest.

101. SPOTTED SHAG *Stictocarbo punctatus*

Plate 24

Other names: Parekareka, Blue Shag (southern subspecies)

Size: 70 cm, 1200 g

Geographical variation: Two subspecies: the Spotted Shag *punctatus* breeds in the North Island and the northern and eastern South Island, and the Blue Shag *stedi* breeds around the southwestern South Island and Stewart Island.

Distribution: Breed only in New Zealand. In the North Island, Spotted Shags breed in the inner Hauraki Gulf, on the west coast of Auckland and the Waikato, on Kapiti Island and on Somes Island in Wellington Harbour. In the South Island, they nest in the Marlborough Sounds, down the Kaikoura coast to Banks Peninsula, and from North Otago to the Catlins. Blue Shags nest in a few scattered colonies in Westland (e.g. Perpendicular Point at Punakaiki, and the Open Bay Islands) and on islands in Foveaux Strait and around Stewart Island. There is much local movement between feeding and nesting areas.

Spotted Shags favour the marine environment off rocky shores and rarely venture into enclosed estuaries, freshwater habitats or sandy sea coasts. After breeding, most form large winter flocks and often fly in long lines between their feeding and roosting sites. Most birds remain within 200 km of their breeding grounds, but some long-distance movement occurs, such as the annual appearance of a mixed-age flock of 20–50 birds in Hawke's Bay over 300 km from the nearest known breeding site. Odd birds (especially juveniles) can appear almost anywhere, including several records from Lake Taupo, and a juvenile banded on Somes Island in July was caught five months later on the Coromandel Peninsula, 500 km away.

Population: Widespread and locally common (10,000–50,000 pairs), Spotted Shags are probably increasing, with marked increases recorded on Banks Peninsula and in Wellington Harbour in the past 30 years.

Conservation: Protected endemic. Spotted Shags are sometimes illegally shot by fishermen, and some birds are caught accidentally in fishing nets. Shags are now known to have

a minimal impact on fish stocks, and few are now shot. Spotted Shags often breed at sites where nests are difficult to count and often change sites, and so population trends are hard to assess.

Breeding: Nest in colonies of 10–700 pairs, normally apart from other shags. The colonies are usually on coastal cliff ledges or rocky islets. The nest is a platform about 0.6 m in diameter, made of seaweed, grass and iceplants. The breeding season is variable from year to year and in different parts of the country; in the Hauraki Gulf, peaks of laying are in March, August and December; on Somes Island, the two peaks are in June and November; but at Banks Peninsula and Otago Harbour, the only peak is in September–November. Laying of Blue Shags at Punakaiki is quite variable, March–April in some years but August–October in others.

They lay 1–3–4 pale blue eggs (58 x 36 mm, 42 g) at 2–day intervals. The incubation period is 28–31–35 days. Chicks are guarded continuously until c. 30 days old and are fed about four times a day by both parents. Chicks leave the nest and fledge at 57–62–71 days old. The oldest Spotted Shag recorded was over 10 years old.

Behaviour: Form large flocks of up to 2000 birds when feeding, or roosting on headlands or sandspits out of the breeding season. They are silent away from their colonies. Displaying males are noisy, but females remain silent.

Feeding: Diet is mainly small fish less than 15 cm long, and marine invertebrates. The main fish taken are ahuru, red cod, gudgeon, bullies and sprats; arrow squid are also taken frequently. Spotted Shags mainly feed in deep water up to 15 km from the shore, but they sometimes feed in harbours. Their average dive time is c. 30 seconds, with a rest of 10–15 seconds between dives. The longest dive recorded lasted 70 seconds.

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